

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

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Dear Sir:

Architect-engineer services will be provided by Catalytic Construction Co., Philadelphia, for a new advanced type cyclotron facility at Oak Ridge National Laboratory, Oak Ridge, Tenn. Firm was selected by the USAEC for the job, with construction bids to be invited later. Catalytic will begin immediate design of the cyclotron facility. Union Carbide Corp., which operates the Laboratory for the Commission, will design the cyclotron and associated equipment with Catalytic providing engineering assistance in Oak Ridge during the design of the equipment. The machine will be known as the Oak Ridge Relativistic Isochronous Cyclotron (ORIC) and with its associated equipment will cost some \$3 million which were appropriated last Summer by Congress for this project. The ORIC, a 76-inch cyclotron, will be a new type with fixed-frequency and variable energy capable of accelerating protons from seven to 75 Mev and ions of a variety of elements up to about 100 Mev. (Other CONTRACT NEWS, p.2 this LETTER.)

Sale has been made by Curtiss-Wright Corp., of a 1000 kw nuclear reactor to the Thailand Atomic Energy for Peace Commission. For use at Chulalongkorn University, Bangkok, the reactor will assist training in nuclear physics and allied sciences at the scientific school there. Financial assistance to buy the reactor is being given Thailand by the U.S. under terms of the bi-lateral agreement between the two countries. Thailand's contract with Curtiss-Wright calls for the design, fabrication, installation and initial operation of the reactor which it is estimated will take two years to complete. (Other BUSINESS NEWS, p.5 this LETTER.)

Proposal of Atlas Corp., to merge four U.S. uranium mining and milling firms in which it has interests into its wholly-owned Hidden Splendor Mining Co., has met with opposition of minority stockholders of one firm, Rio de Oro Uranium Mines, Inc. Securities and Exchange Commission, now considering Atlas' proposal, has continued hearings until January 9th, 1959 at request of these stockholders. Atlas, an investment company dealing in special situations and headed by Floyd B. Odlum, has almost half of its \$108,486,352 assets in these U.S. uranium properties whose merger is now pending. Mr. Odlum told stockholders at the annual meeting in New York last week that production from these properties is 40,000 tons of uranium ore per month. (Other FINANCIAL NEWS, p.5 this LETTER.)

Radioisotope applications in the automobile industry will be covered in some four papers scheduled for the Society of Automotive Engineers' annual meeting Jan. 12-16, 1959, in Detroit. Use of Radioactive Tracers in Rubber Research will be discussed by S.D. Gehman; Engine Air Flow by the Total Count Method will be covered by B.A. Fries, F.J. Davis, and D.E. Hull; Engine Voltage Requirement Using Spark Plugs Pre-Ionized with Radioactive Gold will be described by J.J. Gumbleton; and Probing Causes of Piston Ring Wear by Radiotracer Technique will be discussed by R. Abowd, Jr. (Further details may be obtained from the SAE, 485 Lexington Ave., New York 17, N.Y.)

BIDS ASKED, CONTRACTS AWARDED...in the nuclear field...

BIDS ASKED:- Sealed bids have been asked from its 11 member countries by the International Atomic Energy Agency, Vienna, Austria, to supply three tons of natural uranium in the form of metal ingots or billets. Material is to be supplied the government of Japan, which had made the request to IAEA. Bidders in the U.S. should discuss the matter with the USAEC's division of international affairs, Wash. 25, D.C. Bids submitted will be forwarded to the IAEA; deadline is December 12, 1958. Delivery of the material is to be as soon as practical, but not later than August, 1959.

Industrial firms in the U.S. have been asked to advise the USAEC whether they are interested in financing, building and operating a gamma irradiator which might be used for research and development on industrial applications of high level radiation. Such an irradiator would be designed for the equivalent of 2 million curies of cobalt-60. It would have maximum flexibility for accommodating radiation sources of different kinds and of varying sizes and shapes for high-level irradiation of solids, liquids and gases. Cost of the facility is estimated to be \$1,600,000 exclusive of the cost of the radiation source. Up to one million curies of cobalt-60 would be provided free by the USAEC, or other reasonable proposals for Commission assistance would be considered. (Under such circumstances, the owner of the irradiator would have to make it available a substantial part of the time for use by others at reasonable fees, and also make public the plans, specifications, and cost of the irradiator.) Those interested should get in touch with the Director of the USAEC's office of isotope development, Wash. 25, D.C. not later than Dec. 31, 1958. If enough interest is shown, the USAEC will issue request for formal proposals.

CONTRACTS & SUBCONTRACTS AWARDED:- Under subcontract awarded by Bailey Meter Co., Cleveland, to Stromberg Carlson division of General Dynamics Corp., nuclear instrumentation and safety systems will be supplied by Stromberg for the Enrico Fermi nuclear power plant. Bailey Meter holds prime contract for all instruments and controls for the nuclear portion of the power plant. The plant is now under construction near Monroe, Michigan. Power Reactor Development Co., a nonprofit corporation of seven manufacturing and engineering firms and fourteen utility companies is constructing the reactor portion of the plant. The nuclear instrumentation and safety systems Stromberg will supply will use transistors and other solid-state devices exclusively. They are similar to transistorized instrumentation systems recently delivered by Stromberg to the Knolls Atomic Power Laboratory for a prototype naval nuclear reactor.

Contract has been given by the USAEC to American Municipal Association, Washington, to assemble and report on available information concerning the impact of private atomic energy activities on local government. Information developed by the study is expected to be of help both to the Commission in administering its research and regulatory programs, and to local officials. Contract cost of the study, which is to be completed in 6-months, is \$14,860.

Cost-plus-fixed-fee contract will be negotiated by the USAEC with the Nuclear Div. of Combustion Engineering, Inc., Windsor, Conn., for operation of the Argonne low power reactor at the national reactor testing station, Arco, Idaho. Combustion Engineering's proposal was selected from among 13 received in response to USAEC invitation. Besides plant operation, the firm will do research and development work; provision for this will be made in the contract. (The Argonne low power reactor, designed for military use in remote locations, is a direct-cycle, natural-circulation boiling water type fueled with enriched uranium and moderated with light water. Its full power of 3,000 thermal kw would be used to generate about 200 kw of electricity and 400 kw of space heat.)

PEOPLE...in nuclear work...

George de Hevesy has been selected by the Ford Foundation to receive its second Atoms-for-Peace Award consisting of \$75,000 and a gold medallion. Prof. de Hevesy was cited for his development of radioisotope tracer techniques.

Ellison C. Shute has been appointed manager of the USAEC's San Francisco operations office, Oakland, Calif. He succeeds Harold A. Fidler, who becomes assistant to the director of the Ernest O. Lawrence Radiation Laboratory, University of Calif., Berkeley.

J. Robert Wolcott has been named manager of manufacturing for the atomic power equipment department of General Electric Co., San Jose, Calif. Mr. Wolcott had been manager of design engineering for GE at San Jose.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

PRODUCTS FROM MANUFACTURERS:- New standards and source set contains a selected group of four certificated radioactive standards in solution and a variety of 16 sources all in USAEC exempt quantities. The standards are manufactured by this firm and supplied in flame sealed glass ampoules. --Nuclear-Chicago Corp., 229 W. Erie St., Chicago 10, Ill.

Multiplier phototube, Model 6342-A, is for use in scintillation counters. It supersedes Model 6342, and is said to have better design and performance characteristics. --Radio Corp. of America, Electron Tube Div., Harrison, N.J.

Tritiated titanium targets are supplied by this producer as thin films of tritiated titanium on stainless steel or molybdenum. Suggested uses are as a neutron source or an ion producer in static eliminators, current regulating tubes, and vacuum gauges. --Radiation Research Corp., 1114 First Ave., New York 21, N.Y.

Model NC-2 neutron monitor handles 20 cps to 10 kc. Counting rate meter has full scale ranges from 20 cps to 10 kc in 8 steps. --Tullamore Electronics Lab., 6055 S. Ashland Ave., Chicago 36, Ill.

PRODUCT NEWS:- Four standard fuel element types for use in low-power nuclear research reactors will now be produced by Sylvania-Corning Nuclear Corp. Based on successful elements produced by the firm and already in use in nuclear research reactors in the U.S. and other countries, they are the first of a series of standard fuel elements with others to be announced as new designs show proven merit. Lee L. Davenport, president of Sylvania-Corning, who described the products before the American Nuclear Society meeting in Detroit recently, noted that for the first time it will be possible for users to order finished fuel elements "off the shelf". He pointed out that nuclear reactors could now be designed on a foundation of available standard fuel elements.

New gas servo, for high temperature and radiation environments, has been developed by the aircraft accessory turbine department of General Electric Co., Lynn, Mass. Basically a force servo with position and velocity feedback, it can be used as either a hot or cold gas servo. Only three major components are involved in the system: an energy source, the valve actuator units, and a stabilization network.

Base charges of \$15 per gram of uranium-233 and \$12 per gram of plutonium have been established by the USAEC for such material for research and development use by private individuals and companies in the U.S. and foreign governments receiving it under bilateral agreements. In the U.S., special nuclear materials--uranium-235, uranium-233, and plutonium--may be owned only by the Government. When used privately on a lease basis, the annual lease charge will be 4% of the base charge.

Some 10,049.78 grams of uranium enriched to 19.76% in uranium-235 have been sold by the U.S. to the Government of Belgium for about \$32,000. The fuel will be used in a 10 kw. pool type research reactor sold by General Atomic div. of General Dynamics Corp., to the government of Belgian Congo and Ruanda-Urundi; reactor is at the University of Lovanium, Leopoldville, Belgian Congo. General Atomic had fabricated the fuel, which is in rods of uranium zirconium hydride.

Aureomycin, Terramycin, and Tetracycline, labeled with carbon-14, are now being produced by fermentation in a medium containing the radioactive carbon in process developed by Chas. Pfizer & Co., Brooklyn, N.Y. The method is one covered by recently issued Pfizer patent.

RADIATION NEWS:- Radioactivity levels in milk collected during August, 1958, from 10 sampling stations throughout the U.S., as measured by Public Health Service, showed a decline in strontium-90 content of 6 stations, compared with July, 1958 levels; an increase in 3 stations over July, 1958 levels (Atlanta, Ga., Chicago, Ill., Sacramento, Calif.); with a 10th station reporting in August for the first time (Spokane, Wash.). All levels were below current permissible levels of National Committee on Radiation Protection.

MANUFACTURERS' LITERATURE:- New booklet, "Nuclear Fuels: Key to Reactor Performance", is now offered by Sylvania-Corning Nuclear Corp., Bayside, L.I., New York.

Laboratories and development facilities of Alco Products, Inc., Schenectady, N.Y., including the firm's nuclear criticality facility, radio-chemical, and other sections, are described in new brochure available from the company.

Radioactivity at Work, No. 14, recently issued, describes work of Nuclear Science & Engineering Corp., P.O. Box 10901, Pittsburgh 36, Pa.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...

ISSUED November 25, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Apparatus for deep-well logging. S.A. Scherbatskoy, inventor. No. 2,862,106 issued to inventor of record. (2) Means for and method of controlling the generation of x-rays. H.R. Cummings, inventor. No. 2,862,107 assigned to General Electric Co., New York, N.Y. (3) Device for containing and exposing a radioactive material. J. Mellink, inventor. No. 2,862,108 assigned to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. (4) Nuclear anemometer. W.A. Morgan, inventor. No. 2,861,452 assigned to General Electric Co., New York, N.Y.

ISSUED November 25, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Accelerometer. K.E. Pope, inventor. No. 2,861,789 assigned to USAEC. (2) Wet fluoride separation method. G.T. Seaborg, J.W. Gofman, R.W. Stoughton, inventors. No. 2,861,866 assigned to USAEC. (3) Recovery of iron, aluminum, and phosphate values from phosphorous materials. D.H. Reeve, inventor. No. 2,861,869 assigned to USAEC. (4) Multi-channel pulse height analyzer. K. Boyer, C.W. Johnstone, inventors. No. 2,862,105 assigned to USAEC. (5) Regenerative transistor amplifier. L.J. Kabell, inventor, No. 2,862,113 assigned to USAEC.

ISSUED December 2, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Formation by irradiation of an expanded cellular polymeric body. A. Charlesby, M. Ross, inventors. No. 2,862,862 assigned to USAEC. (2) Method of measuring the integrated energy output of a neutronic chain reactor. W.J. Sturm, inventor. No. 2,863,062 assigned to USAEC.

TRADE-MARK NEWS:- Trade-marks to be issued by the trade mark division of the U.S. Patent Office include mark Detectolab (SN 43,585) filed by Borg-Warner Corp., Chicago, for electronic instruments for measuring nuclear radiation, and mark Tech Ops (SN 47,158) filed by Technical Operations, Inc., Burlington, Mass., for research, development and other work in such fields as nucleonics, physics, etc. Mark recently granted is Aerojet-General Nucleonics (670,215) to Aerojet General Corp.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Nuclear Metallurgy. Report of a symposium on the fabrication of fuel elements. Vol. 5. Special report series no. 7. 84 pages.--Amer. Insti. of Mining, Metallurgical & Petroleum Engineers, 29 W. 39th St., New York 18, N.Y. (\$6.00)

Chemical Behavior of Zirconium. Warren B. Blumenthal. Zirconium as an element and a component of compounds, alloys and interstitial solutions. 398 pages.--D. Van Nostrand Co., Inc., Princeton, N.J. (\$11.00)

Manual of Safe Handling of Radioisotopes. Recommendations prepared by panel of 13 experts from ten countries under chairmanship of Prof. Gunnar Randers, of Norway. English edition now available; French, Russian and Spanish editions planned for near future. --International Atomic Energy Agency, Vienna, Austria. (US \$1.00; £0.6.0.; Fr. francs. 350.)

Chemical Processing of Nuclear Fuels. F.S. Martin, U.K. Atomic Energy Authority, and G.L. Miles, Australian Atomic Energy Commission. A text emphasizing basic principles of nuclear fuel processing rather than the technology. --Butterworths Scientific Publications, 88 Kingsway, London, W.C.2, England (40s.)

Report on Nuclear Process Heat in Industry. George Perazich. One of this organization's analyses of potential productive uses of nuclear energy. 44 pages. --National Planning Association, 1606 New Hampshire Ave., N.W., Wash., D.C. (\$1.25)

Bibliography for Nuclear & Conventional Merchant Ships. References to studies of application of nuclear power to merchant ship propulsion. Prepared by F.L. May, of American-Standard, for USAEC. 105 pages. No. ASAE-S-10. (\$2.50).....Simulation of Various Accident Considerations for a Merchant-Ship Pressurized-Water Reactor. Study made by R.S. Boyd, and others, of Battelle Memorial Institute, for USAEC in connection with development of the "Savannah", first U.S. nuclear powered merchant ship. 70 pages. No. BMI-1269. (\$2.00).....Research & Development Program for an Organic Moderated Reactor Power Plant for Propulsion of a 38,000-DWT Tanker. Proposed program as set up by North American Aviation, Inc., for the USAEC. 14 pages. No. NAA-SR-1880. (50¢)--Office of Technical Services, Wash. 25, D.C.

NOTES:- An appraisal by Ashton J. O'Donnell of the Second UN Geneva Atomic Energy Conference appears in the November, 1958, Research for Industry, issued by Stanford Research Institute, Menlo Park, Calif. Mr. O'Donnell, SRI's manager of program development, has been closely connected with the nuclear field for several years.

ATOMIC ENERGY BUSINESS NEWS...

SALES MADE ABROAD BY ACCELERATOR MANUFACTURER:- Two accelerator sales, each in the million dollar class, have been made by High Voltage Engineering Corp., Burlington, Mass. The sales, both of 10 Mev tandem particle accelerators, will mark this firm's first overseas shipments of such machines; delivery is scheduled for 1960. One of the machines, for the Swiss Federal Institute of Technology at Zurich, will be used for basic nuclear research in reactions produced by charged particles and fast neutrons. The other 10-Mev machine will go to the Australian National University Canberra.

GRANT MADE FOR NUCLEAR REACTOR PROJECT:- Payment of \$350,000 has been made by the U.S. to Spain upon completion in that country of a nuclear reactor project including a 3,000 kw pool-type reactor built by the International General Electric Co., New York. Fuel for the Spanish reactor, enriched to 20% in the isotope uranium-235, is provided by the U.S. under a fuel allocation agreement previously made by the two countries. (Spain is the third country to receive a \$350,000 check from the U.S. for a completed nuclear research project; others were Brazil and W. Germany.)

RADIOACTIVE WASTE DISPOSAL FIRM:- Industrial Waste Disposal Corp., Houston, Tex., is to receive USAEC license to collect low level radioactive waste and dispose of it in the Gulf of Mexico beyond the continental shelf. The wastes, to be encased in reinforced concrete and sunk in a minimum depth of 1,000 fathoms, will be collected from medical, industrial and research organizations.

ATOMIC ENERGY FINANCIAL NEWS...

STOCK SPLITS PLANNED:- Two for one stock split payable to stockholders of record Dec. 10, 1958 has been declared by Nuclear-Chicago Corp., manufacturer of measuring and recording instruments for radioactivity. The split will take the form of a 100% stock dividend and one share of common will be issued for each of the 328,562 common shares outstanding.... Energy Fund, Inc., an open-end mutual fund with stock holdings in firms connected with energy production, including nuclear, plans a 10-for-1 stock split; shareholders will be asked to vote on the proposal at the annual meeting Jan. 20, 1959. First offered to the public in Oct., 1955 at \$119.98 a share, recent price has been about \$178 a share.

MANUFACTURER IN REORGANIZATION:- Financial assistance is to be furnished El-Tronics, Inc., Philadelphia, by Bankers Trust Co., New York. The company, a manufacturer of nucleonic and electronic equipment, recently filed a petition for voluntary reorganization under Chapter X of the Bankruptcy Act in Philadelphia District Court. The bank has agreed to accept a certificate of indebtedness, constituting a first lien on all assets of El-Tronics, in lieu of \$84,714 in cash from accounts receivable pledged with the bank. The company's present debt of \$270,000 to Bankers Trust is to be reduced by the court appointed trustees paying Bankers Trust 50% of accounts receivable cash. (Debtor's petition stated it was forced into reorganization proceedings because Bankers Trust had cancelled its \$700,000 line of credit leaving it without sufficient working capital. It did not state why this line of credit was withdrawn, but said it was solvent with assets of \$2,640,000 and liabilities of \$2,117,000.)

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- New uranium buying program of USAEC is a large measure of help to the U.S. uranium industry according to Gordon Weller, spokesman for the industry's Uranium Institute of America. Advantages of the new policy, he noted, are its support of an \$8 per pound price; encouragement of present producers to expand; providing of a market for new reserves of present producers; and in general giving stability to the industry. (By publication in Federal Register, USAEC modified its domestic uranium procurement program announced May 24, 1956. It withdrew guarantee to purchase uranium concentrates produced during Apr. 1, 1962--Dec. 31, 1966, with respect to new ores developed after Nov. 24, 1958. For new ore reserves developed prior to Nov. 24, 1958, USAEC will pay the established purchase price of \$8 per pound. For new ore reserves, it reserved to itself right to establish buying price based upon need, etc.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

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